IFFO RS Limited

T: +44 (0) 2030 539 195
E: Standards@iffors.com
W: www.iffors.com

Unit C, Printworks | 22 Amelia Street
London, SE17 3BZ | United Kingdom

Global Standard for Responsible Supply of Marine Ingredients

Fishery Assessment Interpretation Guidance Document V2.0

Version No.: 2.0 **Date:** July 2017

INTRODUCTION

The IFFO RS Global Standard and Certification Programme for the Responsible Supply of Fishmeal and Fish Oil (IFFO RS) assess fishmeal and fish oil against three key pillars: sourcing, traceability and production. Source fisheries are assessed against version 2 of the IFFO RS standard using a modular assessment template, which awards a pass or fail rating under a number of sections. The precise structure of the assessment report is determined by the nature of the catch in the fishery, utilising different modules for 'target' and 'bycatch' species, and for those stock with or without stock-specific management regimes.

The original version of this document provided guidance for the completion of the sourcing assessment based on Issue 1, Revision 6 (November 2015) of the IFFO Standard for Responsible Supply. Its purpose was threefold:

1. Clarify the requirements of each assessment section.
2. Recommend determinations based on possible fishery circumstances.
3. Improve consistency by listing previous key assessment decisions.

This is version 2 of the fishery assessment interpretation and guidance document. It has broadly the same set of objectives; however in the case of purpose 3, there are not yet any 'previous assessment decisions' for Version 2 of the process. In order to achieve consistency between the two versions, the intent is that the 'difficulty' of the V2 assessment should remain as similar to V1 as possible. For this reason, where there is a direct equivalence between requirements in the two versions, examples from V1 have been used in this document. It is also anticipated that this document be expanded and updated to reflect assessment decisions as V2 of the process begins to be applied.

It is important to note that the guidance contained within this document is not binding; final interpretation of the adequacy of a fishery at meeting each clause of the standard, and the approval decision for the fishery as a whole, rests with the certification body and their fishery assessment team.

Fishery management has as many variations in approach as there are fisheries, and so this document is not intended to cover all eventualities but rather provide advice for fishery assessors under commonly-encountered scenarios. It is intended to remain under development and will be updated as additional fisheries are assessed, and additional scenarios encountered.

Note that the format of this document should not be used as a template for conducting fishery assessments; assessors should use the fishery assessment template prepared by IFFO RS for this purpose.

Structure and layout of this document

This document is formatted to match the structure of the IFFO RS fishery assessment template. The first half contains information on how to complete the pre-amble, including the application details, quality of information, assessment determination, guidance for on-site assessment, and result summary sections. Many of these are self-explanatory and so guidance is minimal.

The main body of the interpretation document provides guidance advice on a section-by-section basis. Each section is broken into three components:

1. An explanation of how to complete the section.
2. Requirements for a 'pass' rating / general guidance / examples of pass ratings.
3. Recommended information sources.

General Fishery Assessment guidance

The certification body Assessment team will provide a brief summary of the assessment under each section under an initial determination, followed by enough information to justify the pass or fail rating being awarded. Information should always be from reliable sources, preferably recognised scientific or governmental organisations or NGOs. References will need to be provided under each clause to show the source of all information used. Fisheries must achieve a pass rating in all applicable sections to achieve approval overall.

Where there is an information or evidence deficiency, the fishery assessment team will have two options.

a) Firstly, the client can be approached directly to provide answers or additional evidence.

b) Secondly, in some cases additional information or evidence can be sought by the on-site auditors during the factory assessment.

If there is sufficient information to award the fishery a pass rating under every clause, the fishery should be provisionally approved and ratings updated when the additional information becomes available. Where information deficiency prevents the assessment of a clause, or leads to an implied fail rating, the fishery should not be approved until additional information is made available to the assessment team.

ALL REFERENCES should be documented

Information provided throughout the assessment should be from reliable sources, such as official government websites, internationally-recognised scientific organisations, and NGOs. The reference will include the author, the title of the report, the page number and a hyperlink to the internet source (If applicable).

Application details and summary of the assessment outcome	
Name:	
Address:	
Country:	**Zip:**
Tel. No.	**Fax. No.**

Email address:	**Applicant Code**	

Scope Details		
Key Contact:	**Title:**	The country or state/province with primary responsibility for managing the fishery. In assessments where there are multiple relevant management authorities, a separate Section M should be completed for each.
Management Authority (Country/State)		
Certification Body Details		
Name of Certification Body:		Common names of the Category A and Category B species covered by the assessment.
Main Species		
Assessor Name / **Fishery Location**	**Peer Reviewer** / **Assessment Days** / **Initial/Surveillance/ Re-approval** / **Whole fish / By-product**	Marine region where the fishery is conducted, e.g. ICES area, national EEZ, FAO area, specific coastline.
Assessment Period		Gear type(s) used in the fishery under assessment. Where there are multiple gear types, a separate Section F should be completed for each. If the catch composition of the gear types differs substantially, a full separate assessment should be carried out for each.
Gear Type(s)		

Outcome of Assessment	
Overall Outcome	Pass or fail – all relevant sections must achieve a pass rating to pass overall.
Clauses Failed	Indicate which clauses, if any, received a fail rating.
Peer Review Evaluation	Result of peer review, usually either approve or do not approve.
Recommendation	Recommendation of assessment team, usually either approve or do not approve.

Assessment Determination
Brief summary of the findings of the assessment. Include a statement on each of fishery management infrastructure, catch composition overview, stock assessment efforts, other research, control and enforcement, and other impacts of the fishery. Include additional detail on any areas in which the fishery was awarded a fail rating.
Peer Review Comments
Any additional thoughts from the peer reviewer on the accuracy of the assessment decision, the ratings throughout the assessment, and the adequacy of the evidence supporting these.
Notes for On-site Auditor

Under some circumstances, there may be areas of the fishery assessment which need to be confirmed during the on-site audit. These could include: • Ensure that all landings are monitored and recorded by government officials • Ensure that bycatch is monitored and catch composition is accurate • Ensure that vessels details are recorded at landing. This section is for recording any such concerns or requests for the on-site assessor.

Note: This table should be completed for whole fish assessments only.

General Clause	Outcome (Pass/Fail)
M1 - Management Framework	Indicate whether the fishery was awarded a pass or a fail rating in this section of the assessment.
M2 - Surveillance, Control and Enforcement	As above
F1 - Impacts on ETP Species	As above
F2 - Impacts on Habitats	As above
F3 - Ecosystem Impacts	As above

General Results

Note: This table should be completed for whole fish assessments only.

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)	
Category A	List all Category A species assessed as part of the assessment.	Provide an indication of the percentage of total annual landings made up of each species.	A1	Indicate whether each stock was awarded a pass or fail rating in this section.
			A2	As above
			A3	As above
			A4	As above
Category B	List all the Category B species assessed as part of the assessment.	Provide an indication of the percentage of total annual landings made up of each species.	Indicate whether each species was awarded a pass or a fail rating.	
Category C	Indicate the number of Category C species covered by the assessment	Provide an indication of the percentage of total annual landings made up of category C species	Indicate whether Category C species as a whole were awarded a pass or a fail rating. All Category C species must receive a pass rating to be indicated as pass here.	
Category D	Indicate the number of Category D species covered by the assessment	Provide an indication of the percentage of total annual landings made up of category D species	Indicate whether Category D species as a whole were awarded a pass or a fail rating. All Category D species must receive a pass rating to be indicated as pass here.	

[List all Category A and B species. List approximate total %age of landings which are Category C and D species; these do not need to be individually named here]

HOW TO COMPLETE THIS ASSESSMENT REPORT

This fishery assessment template uses a modular approach to assessing fisheries against the IFFO RS standard.

Whole Fish

The process for completing the template for a **whole fish** assessment is as follows:

1. ALL ASSESSMENTS: Complete the Species Characterisation table, to determine which categories of species are present in the fishery.
2. ALL ASSESSMENTS: Complete clauses M1, M2, M3: Management.
3. IF THERE ARE CATEGORY A SPECIES IN THE FISHERY: Complete clauses A1, A2, A3, A4 for **each** Category A species.
4. IF THERE ARE CATEGORY B SPECIES IN THE FISHERY: Complete the Section B risk assessment for **each** Category B species.
5. IF THERE ARE CATEGORY C SPECIES IN THE FISHERY: Complete clause C1 for **each** Category C species.
6. IF THERE ARE CATEGORY D SPECIES IN THE FISHERY: Complete Section D.
7. ALL ASSESSMENTS: Complete clauses F1, F2, F3: Further Impacts.

A fishery must score a pass in **all applicable clauses** before approval may be recommended. To achieve a pass in a clause, the fishery/species must meet **all** of the minimum requirements.

By-products

The process for completing the template for **by-product raw material** is as follows:

1. ALL ASSESSMENTS: Complete the Species Characterisation table with the names of the by-product species and stocks under assessment. The '% landings' column can be left empty; all by-products are considered as Category C and D.
2. IF THERE ARE CATEGORY C BYPRODUCTS UNDER ASSESSMENT: Complete clause C1 for **each** Category C by-product.
3. IF THERE ARE CATEGORY D BYPRODUCTS UNDER ASSESSMENT: Complete Section D.
4. ALL OTHER SECTIONS CAN BE DELETED. Clauses M1 - M3, F1 - F3, and Sections A and B do not need to be completed for a by-product assessment.

By-product approval is awarded on a species-by-species basis. Each by-product species scoring a pass under the appropriate section may be approved against the IFFO RS Standard.

SPECIES CATEGORISATION

The following table should be completed as fully as the available information permits. Any species representing more than 0.1% of the annual catch should be listed, along with an estimate of the proportion of the catch each species represents. The species should then be divided into Type 1 and Type 2 as follows:

- **Type 1 Species** can be considered the 'target' or 'main' species in the fishery. They make up the bulk of annual landings and are subjected to a detailed assessment.
- **Type 2 Species** can be considered the 'bycatch' or 'minor' species in the fishery. They make up a small proportion of the annual landings and are subjected to relatively high-level assessment.

Type 1 Species must represent 95% of the total annual catch. Type 2 Species may represent a maximum of 5% of the annual catch (see Appendix B).

Species which make up less than 0.1% of landings do not need to be listed (NOTE: ETP species are considered separately). The table should be extended if more space is needed. Discarded species should be included when known.

The 'stock' column should be used to differentiate when there are multiple biological or management stocks of one species captured by the fishery. The 'management' column should be used to indicate whether there is an adequate management regime specifically aimed at the individual species/stock. In some cases it will be immediately clear whether there is a species-specific management regime in place (for example, if there is an annual TAC). In less clear circumstances, the rule of thumb should be that if the species meets the minimum requirements of clauses A1-A4, an adequate species-specific management regime is in place.

NOTE: If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in the CITES appendices, it **cannot** be approved for use as an IFFO RS raw material. This applied to whole fish as well as by-products.

TYPE 1 SPECIES (Representing 95% of the catch or more)

Category A: Species-specific management regime in place.

Category B: No species-specific management regime in place.

TYPE 2 SPECIES (Representing 5% OF THE CATCH OR LESS)

Category C: Species-specific management regime in place.

Category D: No species-specific management regime in place.

Common name	Latin name	Stock	% of landings	Management	Category

Complete the above table for **all** species in the assessment – therefore for **all** species making up more than 0.1% of the annual catch by weight. The '% of landings' column can include estimated ranges if there is uncertainty of variability in the catch composition. The 'management' column should contain 'Yes' or 'No', depending on whether the species is subjected to a stock-specific management regime, as described above. The 'category' column should indicate whether the species is Category A, B, C or D, based on the contents of the previous two columns (and the guidance provided above).

MANAGEMENT

The two clauses in this section relate to the general management regime applied to the fishery under assessment. A fishery must meet all the minimum requirements in every clause before it can be recommended for approval.

M1	Management Framework – Minimum Requirements		
	M1.1	There is an organisation responsible for managing the fishery	
	M1.2	There is an organisation responsible for collecting data and assessing the fishery	
	M1.3	Fishery management organisations are publically committed to sustainability	
	M1.4	Fishery management organisations are legally empowered to take management actions	
	M1.5	There is a consultation process through which fishery stakeholders are engaged in decision-making	
	M1.6	The decision-making process is transparent, with processes and results publically available	
		Clause outcome:	

Evidence

This clause should be completed by awarding each of the above requirements a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The fishery must achieve a pass rating against all requirements to be awarded a pass overall.

For a pass rating clear evidence to identify the key organisations involved in the management and administration of the fishery shall be publically available. This should usually include the government department(s) responsible for law- and decision-making; the government department(s) or other organisation(s) responsible for control and enforcement; and the government department(s) or other organisation(s) responsible for research and stock assessment. Assessors should also identify, where possible, the key legal instrument(s) used by these organisations as a basis for fishery management; for example:

- In Iceland, the Fisheries Management Act 1996
- In the USA, The Magnuson Stevens Fishery Conservation and Management Act (FCMA) 1976

In some cases there may not be a single over-arching legal instrument and multiple empowering documents may need to be referenced. Where there is sufficient information available publically to conduct the IFFO RS assessment without resorting to requests for additional information, assessors should consider this evidence that the management process is adequately transparent for the purposes of this clause. Assessors should ensure that the management system includes mechanisms for the engagement and involvement of relevant non-governmental organisations, such as fishing industry representatives or environmental NGOs.

References

Primarily the national governmental websites of the country prosecuting the fishery. The majority of national governments have a Ministry which covers fisheries, either independently or as part of a broader environmental or economic portfolio. Information on consultation processes and transparency may be more difficult to obtain without communicating directly with the client and/or relevant authorities.

Standard clauses 1.3.1.1, 1.3.1.2

	Surveillance, Control and Enforcement - Minimum Requirements

M2	M2.1	There is an organisation responsible for monitoring compliance with fishery laws and regulations	
	M2.2	There is a framework of sanctions which are applied when laws and regulations are discovered to have been broken	
	M2.3	There is no substantial evidence of widespread non-compliance in the fishery, and no substantial evidence of IUU fishing	
	M2.4	Compliance with laws and regulations is actively monitored, through a regime which may include at-sea and portside inspections, observer programmes, and VMS.	
		Clause outcome:	

Evidence

This clause should be completed by awarding each of the above requirements a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The fishery must achieve a pass rating against all requirements to be awarded a pass overall.

The assessment team will ensure that where fishing regulations are broken, sanctions of appropriately effective scale are invoked by the state or states controlling the fishery. The assessment team will list all the key laws and sanctions deemed to be a violation, and where possible provide examples of cases where the punishment on offending vessels has been executed.

The assessment team will determine the effectiveness of the state organisation responsible for fishery control and enforcement, and the actions taken by that organisation. These will include, but are not limited to:

a) dockside monitoring,
b) boarding vessels,
c) on-board observers,
d) video or GPS vessel monitoring,
e) vessel licensing, and

f) aerial enforcement

The assessment team will determine the extent to which these measures are effective, looking in particular for any reports illustrating examples of failed enforcement. Additional evidence for this section can be obtained by on-site assessors, for example ensuring that all landings are monitored or that vessel locations are recorded.

References

Many government ministry websites include summaries of convictions and associated punishments. Many enforcement organisations, often national coastguards or navy, have their own website. News websites can be used to check for examples of failed enforcement.

Standard clause 1.3.1.3

CATEGORY A SPECIES

The four clauses in this section apply to Category A species. Clauses A1 - A4 should be completed for **each** Category A species. If there are no Category A species in the fishery under assessment, this section can be deleted. A Category A species must meet the minimum requirements of all four clauses before it can be recommended for approval. If the species fails any of these clauses it should be re-assessed as a Category B species.

Species Name			
A1	**Data Collection - Minimum Requirements**		
	A1.1	Landings data are collected such that the fishery-wide removals of this species are known.	
	A1.2	Sufficient additional information is collected to enable an indication of stock status to be estimated.	
			Clause outcome:

Evidence

This clause should be completed by awarding each of the above requirements a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The species must achieve a pass rating against all requirements to be awarded a pass overall.

To attain a pass rating the assessment team should be able to determine whether the research conducted on the fishery stock is sufficiently effective and informed to enable responsible management of the fishery. Usually the research will take three forms:

- fishery dependent (data collected by on-board observers, landings data, discard and by catch data),
- fishery independent (trawl, hydro-acoustic and other surveys), and
- 'tertiary' (other research, not necessarily directly fishery related, which contributes to the understanding of the biology and ecology of the target species and associated organisms).

Of these the first two are essential and the assessment team will only consider a medium compliance level to any fishery completely lacking one of either fishery dependent or independent research. Where both are present, assessors should determine the extent to which they are suitable for the responsible management of the stock. Tertiary research is not consider to be essential for high compliance rating under this section, but it can affect an assessment determination if the non-fishery understanding of the stock is particularly good or poor.

References

Stock assessments almost invariably contain information about the data sources used to produce their recommendations. In fisheries where no stock assessment is carried out, assessors should turn to management organisations for information about the methodology for management decision-making.

Standard clause 1.3.2.1.1

A2	**Stock Assessment - Minimum Requirements**		
	A2.1	A stock assessment is conducted at least once every 3 years (or every 5 years if there is substantial supporting information that this is sufficient for the long-term sustainable management of the stock), and considers all fishery removals and the biological characteristics of the species.	
	A2.2	The assessment provides an estimate of the status of the biological stock relative to a reference point or proxy.	
	A2.3	The assessment provides an indication of the volume of fishery removals which is appropriate for the current stock status.	
	A2.4	The assessment is subject to internal or external peer review.	

	A2.5	The assessment is made publically available.	
		Clause outcome:	

Evidence

This clause should be completed by awarding each of the above requirements a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The species must achieve a pass rating against all requirements to be awarded a pass overall.

The assessment team should ensure that the stock assessment contains sufficient information on methodology and sources to be able to consider any reference points and recommendations to be reliable. If the biological stock is fished by more than one country, the stock assessment should include consideration of the fishery removals described by all participating nations. All removals of the species under assessment should be considered by management / factored into stock assessments, including targeted catch, landings as by-catch, and discards. If by-catch and/or discards have been estimated as minimal by a scientific organisation then this is acceptable for the purposes of this clause. Reference points and/or proxies should be in a form appropriate for the specific stock under assessment.

References

Stock assessments are often made available on government or scientific organisation websites. If the stock assessment cannot be easily obtained, the species should be awarded a Fail rating against requirement A2.5.

Standard clause 1.3.2.2, 1.3.2.1.2, 1.3.2.1.4

A3	**Harvest Strategy - Minimum Requirements**		
	A3.1	There is a mechanism in place by which total fishing mortality of this species is restricted.	
	A3.2	Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment. Where a specific quantity of removals is recommended, the actual removals may exceed this by up to 10% ONLY if the stock status is above the limit reference point or proxy.	
	A3.3	Commercial fishery removals are prohibited when the stock has been estimated to be below the limit reference point or proxy (small quotas for research or non-target catch of the species in other fisheries are permissible).	
		Clause outcome:	

Evidence

This clause should be completed by awarding each of the above requirements a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The species must achieve a pass rating against all requirements to be awarded a pass overall.

Assessment is by a direct comparison of scientific advice against the published fishing quota. The enforcement is covered in clause A2. The assessment team will also consider final landings data and compare this to the initial scientific advice. The assessment should consider all historical data, but can award a pass rating as long as the fishery removals meet the requirements outlined in A3.2.

Note that all advice in this section is subject to the interpretation of all available evidence. Some states issue small quotas for scientific research purposes even when the advice is for fishery closure. Fisheries with quotas which have historically been significantly above advice may achieve a pass rating if there is a long-term plan under implementation which is making significant reductions in landings each season. The final determination is the decision of the assessment team and the guidance above is not binding.

References

Assessors should obtain quota and landings data for recent years as a minimum. Scientific advice should be produced independently of the quota-setting organisation, and assessors may wish to award a reduced compliance level to fisheries where this is not the case, or where the initial scientific advice is not available.

Standard clause 1.3.2.1.3

A4	Stock Status - Minimum Requirements		
	A4.1	The stock is at or above the target reference point, OR IF NOT: The stock is above the limit reference point or proxy and there is evidence that a fall below the limit reference point would result in fishery closure OR IF NOT: The stock is estimated to be below the limit reference point or proxy, but fishery removals are prohibited.	
			Clause outcome:

Evidence

This clause should be completed by awarding the above requirement a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The species must achieve a pass rating against all requirements to be awarded a pass overall.

This clause is scored using the straightforward rules outlines above. Essentially, the stock should be awarded a Fail rating if it is currently estimated to be below the limit reference point and fishing is still occurring.

References

Stock status should be indicated in the stock assessment report.

Standard clause 1.3.2.1.4

CATEGORY B SPECIES

Category B species are those which make up greater than 5% of landings in the applicant raw material, but which are not subject to a species-specific research and management regime sufficient to pass all Category A clauses. If there are no Category B species in the fishery under assessment, this section can be deleted.

Category B species are assessed using a risk-based approach. The following process should be completed once for each Category B species.

If there are estimates of biomass (B), fishing mortality (F), and reference points

It is possible for a Category B species to have some biomass and fishing mortality data available. When sufficient information is present, the assessment team should use the following risk matrix to determine whether the species should be recommended for approval.

Table B(a) - F, B and reference points are available

Biomass is above MSY / target reference point	Pass	Pass	Pass	Fail	Fail
Biomass is below MSY / target reference point, but above limit reference point	Pass, but re-assess when fishery removals resume	Pass	Fail	Fail	Fail
Biomass is below limit reference point (stock is overfished)	Pass, but re-assess when fishery removals resume	Fail	Fail	Fail	Fail
Biomass is significantly below limit reference point (Recruitment impaired)	Fail	Fail	Fail	Fail	Fail
	Fishery removals are prohibited	**Fishing mortality is below MSY or target reference point**	**Fishing mortality is around MSY or target reference point, or below the long-term average**	**Fishing mortality is above the MSY or target reference point, or around the long-term average**	**Fishing mortality is above the limit reference point or above the long-term average (Stock is subject to overfishing)**

If the biomass / fishing pressure risk assessment is not possible

Initially, the resilience of each Category B species to fishing pressure should be estimated using the American Fisheries Society procedure described in Musick, J.A. (1999). This approach is used as the resilience values for many species and stocks have been estimated by FishBase, and are already available online. For details of the approach, please refer to Appendix A. Determining the resilience provides a basis for estimating the risk that fishing may pose to the long-term sustainability of the stock. Table B(b) should be used to determine whether the species should be recommended for approval.

Table B(b) - No reference points available. B = current biomass; Bav = long-term average biomass; F = current fishing mortality; Fav = long-term average fishing mortality.

$B > B_{av}$ and $F < F_{av}$	Pass	Pass	Pass	Fail
$B > B_{av}$ and F or F_{av} unknown	Pass	Pass	Fail	Fail
$B = B_{av}$ and $F < F_{av}$	Pass	Pass	Fail	Fail
$B = B_{av}$ and F or F_{av} unknown	Pass	Fail	Fail	Fail
$B > B_{av}$ and $F > F_{av}$	Pass	Fail	Fail	Fail
$B < B_{av}$	Fail	Fail	Fail	Fail
B unknown	Fail	Fail	Fail	Fail
Resilience	**High**	**Medium**	**Low**	**Very Low**

Assessment Results

Species Name		
B1	Species Name	
	Table used (Ba, Bb)	
	Outcome	

Evidence

This clause should be assessed by utilising the available information and applying it to one of the tables above. An explanation of the table used, the evidence applied, and the outcome should then be provided here.

In Table B(a), proxies of reference points are acceptable.

The 'long term average' for the stock biomass and fishery fishing mortality should be estimated using an approach appropriate to the stock under assessment. This will generally be the mean of all available stock data.
References Category B species are "unmanaged" and as such will generally not have a stock assessment available, and so much of the information required for the assessment may be unavailable. As an absolute minimum, a Category B species must have some indication of the long-term biomass trends, perhaps in the form of survey biomass trends or research/commercial CPUE indices, and the majority will require an indication of fishing mortality trends or indices. Category B species without any of this information must be awarded a Fail rating, as per Table B(b). If resilience for a given species is not available in the FishBase database it should be calculated based on the methodology explained.
Standard clauses 1.3.2.1

CATEGORY C SPECIES

In a whole fish assessment, Category C species are those which make up less than 5% of landings, but which are subject to a species-specific management regime. In most cases this will be because they are a commercial target in a fishery other than the one under assessment. In a by-product assessment, Category C species are those which are subject to a species-specific management regime, and are usually targeted species in fisheries for human consumption.

Clause C1 should be completed for **each** Category C species. If there are no Category C species in the fishery under assessment, this section can be deleted. A Category C species does not meet the minimum requirements of clause C1 should be re-assessed as a Category D species.

Species Name			
C1	**Category C Stock Status - Minimum Requirements**		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	
			Clause outcome:
Evidence This clause should be completed by awarding each of the above requirements a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The species must achieve a pass rating against all requirements to be awarded a pass overall.			
References Category C species will generally have stock assessments available, which can be used as a primary evidence source. If there is no full stock assessment available, any other source indicating the status of the stock may be used (e.g. survey biomass, commercial or survey CPUE indices). Where a species fails this Clause, it may be assessed as a Category D species instead, EXCEPT if there is evidence that it is currently below the limit reference point.			
Standard clauses 1.3.2.2			

CATEGORY D SPECIES

In a whole fish assessment, Category D species are those which make up less than 5% of landings and are not subject to a species-specific management regime. In the case of mixed trawl fisheries, Category D species may make up the majority of landings. In a by-product assessment, Category D species are those which are not subject to a species-specific management regime. In both cases, the comparative lack of scientific information on the status of the population of the species means that a risk-assessment style approach must be taken.

The process for assessing Category D species involves the use of a Productivity-Susceptibility Analysis (PSA) to further subdivide the species into 'Critical Risk', 'Major Risk' and 'Minor Risk' groups. If there are no Category D species in the fishery under assessment, this section can be deleted.

Productivity and susceptibility ratings are calculated using a process derived from the APFIC document "Regional Guidelines for the Management of Tropical Trawl Fisheries, which in turn was derived from papers by Patrick *et al* (2009) and Hobday *et al* (2007). Table D1 should be completed for each Category D species as follows:

- Firstly, the best available information should be used to fill in values for each productivity and susceptibility attribute.
- Table D2 should be used to convert each attribute value into a score between 1 and 3.
- The average score for productivity attributes and the average for susceptibility attributes should be calculated.
- Table D3 should be used to determine whether the species is required to meet the requirements of Table D4. A species which does not need to meet the requirements of D4 is automatically awarded a pass.
- Table D4 should be used to assess those species indicated by Table D3 to determine a pass/fail rating.
- Any Category D species which has been categorised by the IUCN Red List as Endangered or Critically Endangered, or which appears in the CITES appendices, automatically results in a fail.

D1	Species Name		
	Productivity Attribute	**Value**	**Score**
	Average age at maturity (years)		
	Average maximum age (years)		
	Fecundity (eggs/spawning)		
	Average maximum size (cm)		
	Average size at maturity (cm)		
	Reproductive strategy		
	Mean trophic level		
		Average Productivity Score	
	Susceptibility Attribute	**Value**	**Score**
	Overlap of adult species range with fishery		
	Distribution		
	Habitat		
	Depth range		
	Selectivity		
	Post-capture mortality		
		Average Susceptibility Score	
		PSA Risk Rating (From Table D3)	
		Compliance rating	

References

The majority of information for this table can be sourced from FishBase.org.

Standard clauses 1.3.2.2

Table D2 - Productivity / Susceptibility attributes and scores.

Productivity attributes	Low productivity/ High risk	Medium productivity/ Medium risk	High productivity/ Low risk
	Score 3	Score 2	Score 1
Average age at maturity (years)	>4	2 to 4	<2
Average maximum age (years)	>30	10 to 30	<10
Fecundity (eggs/spawning)	<1 000	1 000 to 10 000	>10 000
Average maximum size (cm)	>150	60 to 150	<60
Average size at maturity (cm)	>150	30 to 150	<30
Reproductive strategy	Live bearer, mouth brooder or significant parental investment	Demersal spawner "berried"	Broadcast spawner
Mean trophic level	>3.25	2.5–3.25	<2.5

Susceptibility attributes		High susceptibility/ High risk	Medium susceptibility/ Medium risk	Low susceptibility/ Low risk
		Score 3	Score 2	Score 1
Availability	1) Overlap of adult species range with fishery	>50% of stock occurs in the area fished	Between 25% and 50% of the stock occurs in the area fished	<25% of stock occurs in the area fished
	2) Distribution	Only in the country/ fishery	Limited range in the region	Throughout region/ global distribution
Encounterability	1) Habitat	Habitat preference of species make it highly likely to encounter trawl gear (e.g. demersal, muddy/sandy bottom)	Habitat preference of species make it moderately likely to encounter trawl gear (e.g. rocky bottom/reefs)	Depth or distribution of species make it unlikely to encounter trawl gear (e.g. epi-pelagic or meso-pelagic)
	2) Depth range	High overlap with trawl fishing gear (20 to 60 m depth)	Medium overlap with trawl fishing gear (10 to 20 m depth)	Low overlap with trawl fishing gear (0 to 10 m, >70 m depth)
Selectivity		Species >2 times mesh size or up to 4 m length	Species 1 to 2 times mesh size or 4 to 5 m length	Species <mesh size or >5 m length
Post capture mortality		Most dead or retained Trawl tow >3 hours	Alive after net hauled Trawl tow 0.5 to 3 hours	Released alive Trawl tow <0.5 hours

Note: Availability 2 is only used when there is no information for Availability 1; the most conservative score between Encounterability 1 and 2 is used.

D3		Average Susceptibility Score		
		1 - 1.75	1.76 - 2.24	2.25 - 3
Average Productivity Score	1 - 1.75	PASS	PASS	PASS
	1.76 - 2.24	PASS	PASS	TABLE D4
	2.25 - 3	PASS	TABLE D4	TABLE D4

D4	Species Name		
	Impacts On Species Categorised as Vulnerable by D1-D3 - Minimum Requirements		
	D4.1	The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.	
	D4.2	There is no substantial evidence that the fishery has a significant negative impact on the species.	
			Outcome:

Evidence

This clause should be completed as described above. Any species which are categorised as Vulnerable by table D3 should then be awarded a pass or fail rating against each of the requirements above. All Vulnerable species must receive a pass rating against both requirements for Section D to receive a pass overall. Species which are not categorised as Vulnerable by table D3 do not need to be subjected to any further analysis.

Species categorised as Vulnerable by table D3 must be considered during the management process. This means there must be evidence that fishery managers are aware that the species is vulnerable and have taken steps to ensure it is not put at additional risk of over-exploitation by the fishery under assessment.

References

The primary source of information for completing Category D will generally be FishBase.org, although any reliable scientific source of species information can be used. Where the life history characteristics of the specific species under assessment are not available, the characteristics of a similar species may be used.

Standard clause 1.3.2.2

FURTHER IMPACTS

The three clauses in this section relate to impacts the fishery may have in other areas. A fishery must meet the minimum requirements of all three clauses before it can be recommended for approval.

F1	Impacts on ETP Species - Minimum Requirements		
	F1.1	Interactions with ETP species are recorded.	
	F1.2	There is no substantial evidence that the fishery has a significant negative effect on ETP species.	
	F1.3	If the fishery is known to interact with ETP species, measures are in place to minimise mortality.	
			Clause outcome:

Evidence

This clause should be completed by awarding each of the above requirements a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The species must achieve a pass rating against all requirements to be awarded a pass overall.

A pass rating in this clause requires that the impacts of the fishery on ETP species must be recognised and, where they are considered potentially significant, mitigated. The assessment team should award a Fail rating if there is any evidence that the fishery has a substantial negative impact on ETP species.

References

Utilise a combination of fishery management plans, stock assessments, and external scientific research into gear, ecosystem and non-target species impacts of the fishery. Generalised scientific evidence may be used to illustrate the impacts (or lack of impacts) of gear types or fishing methods. Journalistic or eNGO reports may be used as evidence of 'substantial negative impact', provided they are reliable.

Standard clause 1.3.3.1

F2	Impacts on Habitats - Minimum Requirements		
	F2.1	Potential habitat interactions are considered in the management decision-making process.	
	F2.2	There is no substantial evidence that the fishery has a significant negative impact on physical habitats.	
	F2.3	If the fishery is known to interact with physical habitats, there are measures in place to minimise and mitigate negative impacts.	
			Clause outcome:

Evidence

This clause should be completed by awarding each of the above requirements a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The species must achieve a pass rating against all requirements to be awarded a pass overall.

A pass rating in this clause requires that the impacts of the fishery on ETP species must be recognised and, where they are considered potentially significant, mitigated. The assessment team should award a Fail rating if there is any evidence that the fishery has a substantial negative impact on ETP species.

References

Utilise a combination of fishery management plans, stock assessments, and external scientific research into gear, ecosystem and non-target species impacts of the fishery. Generalised scientific evidence may be used to illustrate the impacts (or lack of impacts) of gear types or fishing methods. Journalistic or eNGO reports may be used as evidence of 'substantial negative impact', provided they are reliable.
Standard clause 1.3.3.2

F3	**Ecosystem Impacts - Minimum Requirements**		
	F3.1	The broader ecosystem within which the fishery occurs is considered during the management decision-making process.	
	F3.2	There is no substantial evidence that the fishery has a significant negative impact on the marine ecosystem.	
	F3.3	If one or more of the species identified during species categorisation plays a key role in the marine ecosystem, additional precaution is included in recommendations relating to the total permissible fishery removals.	
			Clause outcome:

Evidence

This clause should be completed by awarding each of the above requirements a pass or fail rating, and then providing a summary of the relevant evidence used to reach the ratings in this box. The species must achieve a pass rating against all requirements to be awarded a pass overall.

A pass rating in this clause requires that the impacts of the fishery on the ecosystem must be recognised and, where they are considered potentially significant, mitigated. The assessment team should award a Fail rating if there is any evidence that the fishery has a substantial negative impact on the ecosystem.

References

Utilise a combination of fishery management plans, stock assessments, and external scientific research into gear, ecosystem and non-target species impacts of the fishery. Generalised scientific evidence may be used to illustrate the impacts (or lack of impacts) of gear types or fishing methods. Journalistic or eNGO reports may be used as evidence of 'substantial negative impact', provided they are reliable.

Standard clause 1.3.3.3

SOCIAL CRITERION

In addition to the scored criteria listed above, applicants must commit to ensuring that vessels operating in the fishery adhere to internationally recognised guidance on human rights. They must also commit to ensuring there is no use of enforced or unpaid labour in the fleet(s) operating upon the resource.

Appendix A - Determining Resilience Ratings

The assessment of Category B species described in this assessment report template utilises a resilience rating system suggested by the American Fisheries Society. This approach was chosen because it is also used by FishBase, and so the resilience ratings for many thousands of species are freely available online. As described by FishBase, the following is the process used to arrive at the resilience ratings:

"*The American Fisheries Society (AFS) has suggested values for several biological parameters that allow classification of a fish population or species into categories of high, medium, low and very low resilience or productivity (Musick 1999). If no reliable estimate of r_m (see below) is available, the assignment is to the lowest category for which any of the available parameters fits. For each of these categories, AFS has suggested thresholds for decline over the longer of 10 years or three generations. If an observed decline measured in biomass or numbers of mature individuals exceeds the indicated threshold value, the population or species is considered vulnerable to extinction unless explicitly shown otherwise. If one sex strongly limits the reproductive capacity of the species or population, then only the decline in the limiting sex should be considered. We decided to restrict the automatic assignment of resilience categories in the Key Facts page to values of K, t_m and t_{max} and those records of fecundity estimates that referred to minimum number of eggs or pups per female per year, assuming that these were equivalent to average fecundity at first maturity (Musick 1999). Note that many small fishes may spawn several times per year (we exclude these for the time being) and large live bearers such as the coelacanth may have gestation periods of more than one year (we corrected fecundity estimates for those cases reported in the literature). Also, we excluded resilience estimates based on r_m (see below) as we are not yet confident with the reliability of the current method for estimating rm. If users have independent r_m or fecundity estimates, they can refer to Table 1 for using this information*."

Parameter	High	Medium	Low	Very low
Threshold	0.99	0.95	0.85	0.70
r_{max} (1/year)	> 0.5	0.16 - 0.50	0.05 - 0.15	< 0.05
K (1/year)	> 0.3	0.16 - 0.30	0.05 - 0.15	< 0.05
Fecundity (1/year)	> 10,000	100 - 1000	10 - 100	< 10
t_m (years)	< 1	2 - 4	5 - 10	> 10
t_{max} (years)	1 - 3	4 - 10	11 - 30	> 30

[Taken from the FishBase manual, "Estimation of Life-History Key Facts", http://www.fishbase.us/manual/English/key%20facts.htm#resilience]

Appendix B – Background on the 5% catch rule

The proposed fishery assessment methodology uses a species categorisation approach to divide the catch in the assessment fishery into groups. These groups are:

- **Category A:** “Target” species with a species-specific management regime in place.
- **Category B:** “Target” species with no species-specific management regime in place.
- **Category C:** “Non-target” species with a species-specific management regime in place.
- **Category D:** “Non-target” species with no species-specific management regime in place

The distinction between 'target' and 'non-target' species is made to enable the assessment to consider the impact of the fishery on all the species caught regularly, without requiring a full assessment be conducted for each. Thus 'target' species are subjected to a more detailed assessment, while 'non-target' species are considered more briefly. For the purposes of the IFFO RS fishery assessment, 'target' and 'non-target' species are defined by their prevalence in the catch, by weight. Applicants must declare which species are considered 'target' species in the fishery, and the combined weight of these must be at least 95% of the annual catch. The remaining 5% can be made up of 'non-target' species. Note also that ETP species are considered separately, irrespective of their frequency of occurrence in the catch.

The proposed use of 5% as a limit for 'non-target' species is one area in which feedback is being sought via the public consultation. The decision to propose a value of 5% ensures consistency with other fishery assessment programmes, such as the MSC which uses 5% to distinguish between 'main' and 'minor' species (see MSC Standard, SA3.4 and GSA3.4.2); and Seafood Watch, which uses 5% when defining the 'main' species for the assessment (see Seafood Watch Standard, Criterion 2). The value is also consistent with the approached used in Version 1 of the IFFO RS Standard, in which up to 5% of the raw material could be comprised of 'unassessed' species.